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NATIONAL LIBRARY OF MEDICINE
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U.S. Department of Bethesda, Md.

John Shaw Billings

AN AUTOBIOGRAPHICAL FRAGMENT

The Board of Regents
of the
National Library of Medicine
of the Public Health Service,
U.S. Department of Health, Education, and Welfare
cordially invites you to the

John Shaw Billings Centennial

at the
National Library of Medicine, Bethesda, Maryland
Thursday, June 17, 1965, at 2 p.m.

R.S.V.P.
49-66308

John Shaw Billings

AN AUTOBIOGRAPHICAL FRAGMENT

1905

A facsimile copy of the original manuscript

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Original manuscript donated to the National Library of Medicine by the grandson of the author, John Shaw Billings, II, in 1964.

The Board of Regents

of the

National Library of Medicine

of the

Public Health Service,

U. S. Department of Health, Education, and Welfare

cordially invites you to a

Symposium on Dr. John Shaw Billings

at the

National Library of Medicine

Bethesda, Maryland

8 p.m.

Thursday, June seventeenth

Nineteen hundred and sixty-five

R.S.V.P.

49-66308

April 1905

Scheme of Autobiography.

3375

1 When I first realized myself. on the hill side on Tristram Burgess's farm looking over Narragansett bay at the white sails in the distance.

2 Life in Allensville
In the Store at Rising Sun.
making boots.
The first study of Latin

3 Life at Miami University.
The Library. Early Reading
Robinson Crusoe Deer slayer & Pathfinder.

4 Life in Kentucky - The Bedingers.

5 Life as a Medical Student in Cincinnati. Blackman - Graham
Sister Anthony.

6 Washington in 1861. Med Exam Board
Dr Mc Sween. Union Hotel Hospital
Hammond and Letterman.
Cliffburne Hospital.
West Philadelphia

7 With the 5th Corps. Battle of Chancellorsville
Gettysburg.

8 In New York. Draft Riots. Davids
Island. Draft Riots Watertown.
Bedloes Island. Expedition to Isle
a Vache

9 Med Inspector Army of the Potomac —
Wilderness — Todds Tavern. Cool
Harbor. In front of Petersburgh.

10 In Washington. Surg Gen's Office
Division of Accounts and Property
Invalid Corps.

11. Library and Museum work

12 Hygiene & Hospitals. Barnes Hospital
at Soldiers Home. Johns Hopkins
Hospital.

13 National Board of Health

14 Building of the Army Museum —
Index Catalogue. Index Medicus.

15 Statistical work. Census work.
Sanitary Engineer work.
work on ventilation.

Surgeon Generalship, Baxter &c

16 Lectures at Columbia
Dept of Hygiene Univ of Penn'a

17 New York Public Library

18 Carnegie Institution

7 With the 5th Corps. Battle of Chancellorsville
Gettysburg.

8 In New York. Draft Riots. David's
Island. Draft Franks Watertown.
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16 Lectures at Columbia
Dept of Hygiene Univ of Penn'a

17 New York Public Library

18 Carnegie Institution

I first got a realizing sense of my own personality or individuality when, a boy about 8 years old, I was at work on a hillside on the farm of Tristram Burgess near Providence R.I. My father was the manager of this farm, and my business that sunny afternoon was to chop up and dig out by the roots all the Canada thistles I could find in the pasture. I had read the Bible through - verse by verse, also Robinson Crusoe, Deerslayer, and the Pathfinder, and The Pilgrims Progress - but I had never done any thinking that I can remember. - But on this memorable afternoon I stood on the hillside and looked over Narragansett Bay, and wondered where all the Cat boats and schooner with their white sails came from, and were going to. Then my thought took this turn - "He only person who ever knew that is God. He knows everything that has been, and is, and is to be. Then hundreds and thousands of years ago He knew that I should be here to day and that each of those boats would be just where it is, and that I should be thinking of them."

Then as his knowledge must have been perfect it is absolutely necessary that I,

just I am, knowing just what I know, am here at this moment, looking at these ships, which also must be each just where they are." Then everything must be arranged and ordered to be just as it is, and no one can prevent it. Therefore I am not responsible for where I am nor for what I do"

I was surprised at this conclusion, and thought I had made a great discovery, and resolved to tell my mother about it when she was worrying about one troubles.

I did tell her about it that night, and said that there was no use in worrying any more. She looked at me in a scornful sort of way and said "Who's been teasing you about predestination?" "Nobody taught me," said I. "I found it out by myself — silent you see it must be so.

My life on the Bourgeois farm, from
about 5 to 10 years of age, was that
of an ordinary farmers boy. I ~~carried a~~
drove the Milk Cart into Providence about 5
A.M. and left the pints and quarts with
the various customers — mostly of the
poorer class. I dropped four of five grains
of sweet corn in the proper place in the furrow
in planting time. - I helped weed the Cabbage
Carrots and young beets, rode the horse
for the horse raking of the hay crop, went
to a country school for three months in the
winter, made little clam bakes along the shore
with my cousins William Henery and Charles
Shaw, and read everything I could lay hands
on. I managed to get a dollar for subscription
to a little lending library in a book shop.
and the first books I took out were Deerslayer,
Path finder, and Jack o the Hill.
I had for my own Robinson Crusoe. Marco
Paul in the forests of Maine. Harry and Lucy,
and Plutarches Lives and was quite sure
that I did not want to be a farmer.

When I was about 10 years old
My father moved to Indiana and established
himself in a little cross roads village
called Allensville, on the road from
Rising Sun to Vevay. Here he kept
a Country Store – was Postmaster, and
had a small shoemaker's shop in which
one man was employed. I learned
something of shoemaking – had some
experience in keeping store, and
occasionally, came across a book – I have
forgotten its title – which had a number
of Latin Quotations in it, asked a young
Clergyman (John C Bonham) how I could
learn Latin – and got a Latin Grammar and
reader – a copy of Caesar, and a Latin
Dictionary and set to work.
It was difficult – but with the aid of Mr Bonham
I made good progress. Then I made an agreement
with my father that if he would help me through
College in the least expensive way, all of his
property should go to my sister and that I
must expect nothing more. I then got some
Greek books, a geometry &c and went on to fit
myself to pass the entrance examination for the

Sub freshman class at Miami University
Oxford Ohio. I succeeded in doing this in
a year - and passed the examination in the Fall
of 1852. For the first two years I kept
bachelors Hall, living on bread, milk, potatoes, eggs
ham etc - such things as I could cook for
myself. The lessons gave me little trouble, most
of my time was spent in reading the books in the
College Library. I was omnivorous, read everything
in English as it came. Philosophy, Theology,
natural science - history travels and fiction.

Published in connection with the
JOHN SHAW BILLINGS CENTENNIAL, JUNE 17, 1965
in commemoration of the 100th anniversary of
Dr. Billings' appointment as head of the
Library of the Surgeon General's Office, U.S. Army

GPO : 1965 O—771-866

U.S. DEPARTMENT OF
HEALTH, EDUCATION, AND WELFARE
Public Health Service

IATIONAL LIBRARY OF MEDICINE

OHN SHAW BILLINGS CENTENNIAL

In this portrait, painted by Cecilia Beaux in 1895, Dr. Billings wears the gown of a Doctor of Civil Law of Oxford. The painting hangs in the Reading Room of the National Library of Medicine.

THE MEDICAL LIBRARIAN AND BIBLIOGRAPHER [1]

The gravitation of John Billings to books was as inevitable and as certain as any law of nature. It was equally certain that, given access to books, he would know their contents, use them, and introduce others to their solace and help. Detailed to the Surgeon General's Office and finding no library, he made one.

That he and no one else was founder of the national medical library needs no discussion after reading the following letter, printed in *The Medical Record*.[2]

WASHINGTON, *February 3, 1880.*

To the Secretary of the Medical Society of the County of New York:

DEAR DOCTOR: As my attention has several times been called to the communication by Dr. Wm. A. Hammond relative to the library of this office, read at the annual meeting of the Society, October 27, 1879, and more especially to the report of this communication given on page 472 of the New York *Medical Record* for November 5, 1879, with requests for explanations, I deem it proper to make a statement on the matter to the Society.

From the report in the *Record*, some have inferred that I claim to have been the founder of the National Medical Library, although the letter of Dr. Hammond as printed on page 40 of the minutes of the meeting, makes it very plain that I have made no such claim.

The facts of the case are simply as follows:

For many years there was a small collection of medical books and journals in the Surgeon General's Office at Washington, which collection was commenced by Surgeon General Lovell prior to 1836.

At the commencement of the war this collection amounted to between three and four hundred volumes.

Dr. Hammond entered on his duties as Surgeon General April 28, 1862, and left Washington August 30, 1863, after which date he was not on duty in this office. During this interval three hundred and fifty-nine volumes were purchased for the use of this office, the principal works being a set of the *Annales d'Hygiene* and a set of the *Boston Medical and Surgical Journal.* During the years 1864 and 1865, about 1,000 volumes were added to the library, mainly selected by Drs. Woodward and Otis.

When the library came under my charge, in the fall of 1865, it contained, as shown by a catalogue made at the time, about 1,800 volumes. At this date it contains about 50,000 volumes and 60,000 pamphlets.

Very respectfully and truly yours,

JOHN S. BILLINGS,
Surgeon, U.S. Army.

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[1] Lydenberg, H. M., *John Shaw Billings*, Chicago, 1924. p. 40–1.

[2] Billings, J. S., *Letter to the Secretary of the Medical Society of the County of New York*, Med. Rec. 17:298–9, March 13, 1880.

JOHN SHAW BILLINGS

Dr. John Shaw Billings was an outstanding figure in American medicine and public affairs from the mid-1860's until his death in 1913. He achieved an international reputation as physician, librarian, bibliographer, statistician, educator, hospital planner, and sanitarian. His accomplishments won him honorary degrees from Edinburgh, Oxford, Munich, Budapest, Dublin, and Harvard, and membership in many learned societies.

Born in Indiana in 1838, Billings obtained his early education chiefly through reading. After graduating from Miami University at Oxford, Ohio, in 1857, he attended the Medical College of Ohio at Cincinnati where he earned his M.D. degree in 1860. He joined the U.S. Army Medical Corps in 1862 through competitive examinations in which he made a brilliant record. He organized Army hospitals in Washington, D.C., and saw field service at Chancellorsville and Gettysburg. In 1864, he was assigned to the Surgeon General's Office in Washington, D.C., to organize medical records of the Union Army. In 1865, he was placed in charge of the Library of the Surgeon General's Office, and he devoted the next 30 years to building this institution into a national resource. This year marks the 100th anniversary of that assignment.

On the occasion of his retirement in 1895, 259 physicians from Great Britain and America sponsored a testimonial dinner at which Dr. Billings was presented with a silver box containing a check for $10,000. That box and his portrait, painted in oil by Cecilia Beaux of Philadelphia, are now in the National Library of Medicine. (The painting hangs in the Reading Room.) After leaving the Library and the Army, Dr. Billings became professor of hygiene at the University of Pennsylvania and subsequently was appointed Director of the New York Public Library.

When the National Board of Health was given quarantine powers and responsibility for reporting on diseases, Dr. Billings served for four years (1879–82) as vice president and was, effectively, director of the Board. In this post, he succeeded in obtaining from the Congress a $500,000 appropriation—remarkably large for those days—to aid States and localities in dealing with epidemics. With these funds, he launched the first Federal grants-in-aid research program. He also devised a system by which Federal grants could be awarded to competent authorities, many of whom were university professors, for "special scientific investigations," including studies relating to air pollution, food and drug adulterations, and infectious diseases such as yellow fever, diphtheria, and malaria.

Helped Plan Hospitals

From the Civil War on, Dr. Billings was regarded as an authority on hospital construction. He was medical advisor to the trustees of the Johns Hopkins Hospital, recommended the selection of William H. Welch and

William Osler for the faculty, laid out the plans for the building, and was highly influential in guiding the institution to a position of leadership in the reform of American medical education. He also participated in planning the buildings of six other institutions: the Barnes Hospital (Soldiers' Home, Washington, D.C.), the Army Medical Library and Museum, the Laboratory of Hygiene and the William Pepper Laboratory of Clinical Medicine of the University of Pennsylvania, the New York Public Library, and the Peter Bent Brigham Hospital in Boston. Besides being one of the original incorporators of the Carnegie Institution of Washington in 1902, he served as Chairman of the Board of Trustees for 10 years. His proposal for the consolidation of New York's many free circulating libraries with the New York Public Library led to the establishment of the famed Carnegie libraries, in whose planning he directly assisted Mr. Andrew Carnegie.

Dr. Billings' achievements were many and varied, but the most important was his creation of the National Library of Medicine. While preparing his doctoral thesis, Billings discovered that no library in the country had the literature he needed for his research. After the Civil War, Billings set about remedying this defect. At the Library of the Surgeon General's Office, his major contributions were:

(1) *Building a collection.* Founded in 1836, the Library of the Surgeon General's Office comprised only 2,253 volumes in 1865. By 1873, there were about 25,000 volumes and 15,000 pamphlets. In 1895, when Billings retired from the Army, the collection totaled 116,847 books and 191,598 pamphlets. Today the National Library of Medicine is the world's largest depository of biomedical literature.

(2) *Index-Catalogue.* To save medical teachers and researchers the drudgery of consulting thousands of incomplete indexes, Billings decided to compile a single, comprehensive reference to the Library's collection which would index all journal articles under subject and, in turn, catalog all separate monographs, pamphlets, theses, and serial titles under author and subject. The first volume of the *Index-Catalogue* appeared in 1880; the first series, consisting of 16 volumes, was completed in 1895. As a guide to the literature of medicine of its time and before, it remains unsurpassed. William H. Welch considered it the most important American contribution to medical science in the 19th century. This was reaffirmed last year by the distinguished head of the Royal Society of Medicine Library in London.

(3) *Index Medicus.* Realizing that a publication as exhaustive as the *Index-Catalogue* could not be kept current, Dr. Billings established the *Index Medicus* in 1879 as a monthly, classified index to current periodical literature, with a detailed, annual author and subject index. Although there have been various changes in format since its beginning, this volume is the direct ancestor of the National Library of Medicine's *Index Medicus.*

Worked on Census

Dr. Billings also had a leading role in the development of vital statistics in connection with the U.S. Census from 1880 to 1910. Indeed, he delighted

in statistics as such and is credited by his biographer, Dr. Fielding H. Garrison, and also by the *Dictionary of American Biography* with being the progenitor of the modern tabulating machine.

"In 1880," Garrison says, "Dr. Billings suggested that the various statistical data of the living and the decedent 'might be recorded on a single card or slip by punching small holes in it, and that these cards might then be assorted and counted by mechanical means according to any selected group of these perforations.'

"This suggestion was taken up and applied by Mr. Herman Hollerith in the electrical counting and integrating machines which are now used by the United States Census."

In its article on Hollerith, the *Dictionary of American Biography* states that the inventor gave Dr. Billings the credit for suggesting the idea and offered him a share in the Tabulating Machine Company which Hollerith started and which eventually grew into the International Business Machines Corporation.

Another modern development that can be traced back to the punchcard idea is MEDLARS, the Library's computer-based information storage and retrieval system. MEDLARS is used to index the literature and prepare various bibliographic guides, including the monthly *Index Medicus*, first produced by Dr. Billings.

As a young military surgeon, armed with uncommon vision and determination, John Shaw Billings set out 100 years ago to transform the small Surgeon General's library into a major research resource for physicians, scientists, and educators throughout the country. He succeeded beyond his fondest expectations as reflected by the National Library of Medicine today.

Dr. Billings was a true pioneer of American medicine.

The vigor with which the Billings tradition is being carried forward by the National Library of Medicine is a happy augury for the future of medical communications.

LUTHER L. TERRY, M.D.

Surgeon General.

NATIONAL LIBRARY OF MEDICINE

U.S. DEPARTMENT OF HEALTH, EDUCATION, AND WELFARE

Public Health Service

PROGRAM

Thursday, June 17, 1965

2 p.m.

PRESIDING

DR. NORMAN Q. BRILL
Chairman, Board of Regents

INVOCATION

THE REVEREND FREDERICK BROWN HARRIS
Chaplain of the Senate

WELCOME

DR. MARTIN M. CUMMINGS
Director, National Library of Medicine

INTRODUCTION

DR. LUTHER L. TERRY
Surgeon General, Public Health Service

MEDICAL LIBRARIES AND MEDICAL RESEARCH

THE HONORABLE JOHN E. FOGARTY
United States Representative, Rhode Island

INTRODUCTION

THE HONORABLE WILBUR J. COHEN
Under Secretary of Health, Education, and Welfare

MEDICAL LIBRARIES AND MEDICAL EDUCATION

THE HONORABLE OREN HARRIS
United States Representative, Arkansas

INTRODUCTION

THE HONORABLE ANTHONY J. CELEBREZZE
Secretary of Health, Education, and Welfare

THE MEDICAL LIBRARY CRISIS—BILLINGS TO MEDLARS

THE HONORABLE LISTER HILL
United States Senator, Alabama

BENEDICTION

BRIG. GEN. W. J. MORAN
Deputy Chief of Chaplains, U.S. Army

Music by the United States Army Band

Lt. Col. SAMUEL R. LOBODA, Conducting

The Public is Invited to Tour the Library and View the Exhibit Depicting the Life and Career of Dr. John Shaw Billings

DIRECTORS OF THE LIBRARY*

1865–1895	Deputy Surgeon General John Shaw Billings, M.C.
1896–1897	Assistant Surgeon General David Low Huntington, M.C.
1898–1902	Surgeon James Cushing Merrill, M.C.
1902–1902	Major Walter Reed, M.C.
1903–1904	Brigadier General Calvin DeWitt, M.C.
1904–1913	Brigadier General Walter Drew McCaw, M.C.
1913–1918	Colonel Champe Carter McCulloch, M.C.
1918–1919	Colonel Paul Frederick Straub, M.C.
1919–1919	Brigadier General Francis Anderson Winter, M.C.
1919–1924	Major General Robert Ernest Noble, M.C.
1924–1927	Colonel James Matthew Phalen, M.C.
1927–1932	Colonel Percy Moreau Ashburn, M.C.
1932–1936	Major Edgar Erskine Hume, M.C.
1936–1945	Colonel Harold Wellington Jones, M.C.**
1945–1946	Colonel Leon Lloyd Gardner, M.C.
1946–1949	Colonel Joseph Hamilton McNinch, M.C.
1949–1963	Colonel Frank Bradway Rogers, M.C.
1964–	Martin Marc Cummings, M.D.

**Known originally as the "Library of the Surgeon General's Office," this institution was named the "Army Medical Library" in 1922 and the "Armed Forces Medical Library" in 1952. It became the "National Library of Medicine" in 1956.*

***During the term of Colonel Jones, the traditional title of "Librarian" was changed to "Director." Colonel Gardner was made "Commandant." Colonel McNinch and his successors have held the title, "Director."*

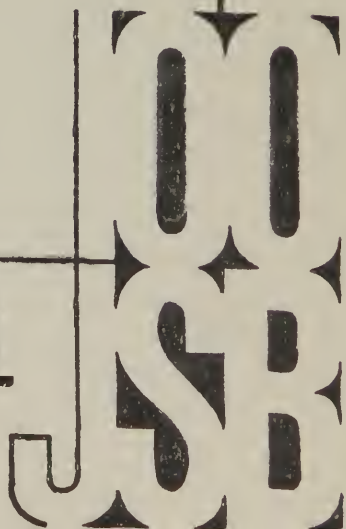
U.S. DEPARTMENT OF HEALTH, EDUCATION, AND WELFARE
Public Health Service
NATIONAL LIBRARY OF MEDICINE

NATIONAL LIBRARY OF MEDICINE

catalog of an exhibit

June 17-30, 1965

OHN SHAW BILLINGS CENTENNIAL



This exhibit is presented in connection with the John Shaw Billings Centennial, June 17, 1965, in commemoration of the 100th anniversary of Dr. Billings' appointment as head of the Library of the Surgeon General's Office, U. S. Army.

The Library takes pleasure in acknowledging its indebtedness to the New York Public Library for its generous assistance, which made possible the preparation of this exhibit. For other gifts, loans, or courtesies, the Library wishes to thank John Shaw Billings, II, Dr. Jean A. Curran, Colonel Robert Fletcher, and Dr. C. J. Maloney; the Carnegie Institution of Washington, International Business Machines Corporation, Library of Congress, Medical Museum of the Armed Forces Institute of Pathology, National Archives, and Smithsonian Institution.

CASE I

Education

Born in Indiana in 1838, Billings was graduated from Miami University in Oxford, Ohio, in 1857. He earned his M.D. degree in 1860 from the Medical College of Ohio in Cincinnati.

1. Miami University. Oxford, Ohio.
   Diploma, Bachelor of Arts degree, 1857, awarded to JSB.

2. Medical College of Ohio. Cincinnati.
   Diploma, M. D. degree, 1860, awarded to JSB.

Nos. 1-2: Gift of John Shaw Billings, II

Civil War Service

Although offered an assistantship to a leading surgeon in Cincinnati, Billings declined when the Civil War broke out. After an examination in which he took top honors, he was commissioned an assistant surgeon in the regular army in April 1862. Dr. Billings won a high reputation in the field as a very skillful and original operative surgeon of great courage and resourcefulness. After the disastrous battle of Chancellorsville, he conducted the retreat of the wounded; at Gettysburg in July 1863, he and his assistant surgeons cared for and fed between 700 and 800 wounded. Billings performed various operations, sometimes working all day and all night.

3. Billings, John Shaw.
   Adventures of a medical man in the Army; profusely illustrated with illustrations of some things which he saw and many others which he did not see [ca. 1865].
   Ms.
   Quizzical account of JSB's experiences in the Army.

4. Billings, John Shaw. Cincinnati, Ohio, October 8, 1861.
   Letter to Simon Cameron [photocopy]
   Application for an invitation to serve as assistant surgeon in the regular Army.

5. Fenley, C. A., Surgeon General.
   Contract with JSB, Washington, D. C., November 13, 1861.
   Ms.
   Agreement to serve as contract surgeon.

6-9, 11-15.
Billings, John Shaw. April 7, 1863 - April 15, 1864.
Letters to his wife.
Describe camp life and activities, and surgery after Gettysburg.

10. Billings, John Shaw.
Photograph as young army officer.

16. Billings, John Shaw.
Photograph in Civil War uniform.

17. Billings, Kate (Stevens).
Photograph as a young woman.
JSB's wife.

18. U.S. Sanitary Commission.
Photograph of field team at the General Hospital, Gettysburg.

19. U.S. Army.
Field surgeon's kit, Civil War.

Nos. 3, 5-9, 11-15: Lent by New York Public Library
No. 4: Courtesy of National Archives
No. 17: Courtesy of Dr. Jean A. Curran
No. 19: Lent by Smithsonian Institution

CASE II

U.S. Marine Hospital Service

Late in the 1860's, the Secretary of the Treasury called on Billings to inspect and recommend an over-all organization for the scattered, federally financed Marine Hospitals. Started by President John Adams in 1798 to care for merchant seamen, these hospitals had been taken over by the Union and Confederate armies during the Civil War. Billings visited them all and recommended military organization, a merit system, and construction changes. The plan was to rehabilitate the hospitals and put them for the first time under a Supervising Surgeon General.

Billings, whose ideas were incorporated into the law which established the Marine Hospital Service in 1870, soon found himself in competition with Dr. John M. Woodworth for the job of Surgeon General. However, Congress ruled that the Service must be headed by a civilian. Having won the appointment, Dr. Woodworth proceeded to organize a national quarantine system and a publication for reporting epidemics from abroad. From these lth Service grew.

20. Boutwell, George S., Secretary of the Treasury. February 26, 1870.
Letter to JSB.
Orders JSB to inspect marine hospitals throughout the South.

21. U.S. Marine Hospital. San Francisco.
Oil painting, 19th century.
Shows hospital, surrounding buildings, and wharf.

22. U.S. Marine Hospital. Cairo, Ill.
Photograph.

23. U.S. Marine Hospital. Chelsea, Mass.
Watercolor, by Ann Little, 1830.

24. U.S. Marine Hospital Service.
Quarantine flag.
Yellow flag with blue insignia. Flown at quarantine stations and on quarantine vessels.

No. 20: Lent by New York Public Library
No. 24: Lent by National Institutes of Health

U.S. National Board of Health

On March 3, 1879, under the stimulus of a yellow fever epidemic, and with the active cooperation of the American Public Health Association, Billings got Congress to set up a National Board of Health. For three years he ran the Board in a precedent-setting way. He initiated a program of grants-in-aid to states, counties, and cities, mainly to fight yellow fever. He instituted grants to colleges in support of research on food adulteration, air and water pollution, and sanitary engineering. The Board made sanitary surveys of port cities. It sent to Havana a Yellow Fever Commission whose studies helped start the research chain that led to the mosquito as vector. The Board took the Marine Hospital Service's quarantine and foreign disease reporting posers. But following Dr. Woodworth's death, the second Surgeon General, Dr. John M. Hamilton, obtained the Board's appropriation for fighting disease. Shortly thereafter, Billings resigned from the National Board of Health, which soon died from lack of Congressional support.

25. The Mascot. New Orleans, August 5, 1882.
Cover cartoon depicting members of the National Board of Health slinging mud at a woman, symbolizing the city of New Orleans.

26. Billings, John Shaw, comp.
Scrapbook, 1882.
Contains newspaper clippings of stories about the National Board of Health.

Nos. 25-26: Lent by New York Public Library

CASE III

Surgeon General's Office Library

In December, 1864, Billings was ordered to the Surgeon General's Office, and in 1865 he acquired unofficial custody of the library. There he carried out his greatest achievement: creation of a national medical library. By using a fund of about $85,000 turned in from savings by the hospitals after the war, and by energetic solicitation of gifts and exchanges, Billings enlarged the library from 2,253 volumes in 1865 to 116,847 bound volumes and 191,598 pamphlets in 1895, when he retired. He made the riches of this collection available in one comprehensive, author-subject Index-Catalogue of both monographic and periodical literature, and created the Index Medicus as a monthly classified index to current periodical literature.

27. U.S. Army. Surgeon General's Office. Staff.
Group photograph, in uniform.
JSB is seated second from right.

Acquisitions

28. U.S. Army. Surgeon General's Office. Library.
Record of medical journals received. Vol. 2. 1869.
Accession book with handwritten entries of serials received.

29. U.S. Army. Surgeon General's Office. Library.
List of medical journals ... wanted ... [Washington, 1875]
3 pts.
Compiled by JSB for his acquisition program.

30. Billings, John Shaw. May 11, 1875.
Draft letter to Dr. W. O. Baldwin, Montgomery, Ala.
Forwards want list (no. 29), and solicits books for the "National Medical Library."

31. U.S. War Department. Adjutant General's Office.
Special orders no. 116. Washington, May 17, 1890. Extract.
1 ℓ.
Orders to JSB for European travel.

32. Moore, John, Surgeon General, U.S. Army. Washington, May 27, 1890.
Letter to JSB.
Outlines JSB's duties in Europe--to acquire materials for the library and museum, and to gather information on census techniques.

33. White Star Line
Passenger list, breakfast menu, and seating card of JSB on R.M.S. Majestic, August, 1890.

34. Barrett (B.) Brothers. London.
Bill of sale, June 28, 1890.
To JSB, for "Large Hold All"

35. Billings, John Shaw.
Photograph, taken in Great Britain.

36. White Star Line.
Passenger list on R.M.S. Britannic, June 4, 1890.
Includes JSB.

Nos. 31-36: Lent by New York Public Library

Catalogs

37. U.S. Army. Surgeon General's Office. Library.
Catalogue of the Surgeon General's Office Library. [Washington] October 23, 1865.
31 *l.*
Lists under 11 different subjects some 2,000 volumes, showing the size of the collection when JSB assumed custody.

38. U.S. Army. Surgeon General's Office. Library.
Specimen fasciculus of a catalogue of the National Medical Library, under the direction of the Surgeon-General, United States Army, at Washington, D. C. Washington, U.S. Govt. Print. Off., 1876.
72 p.

39. U.S. Army. Surgeon General's Office. Library.
Index-catalogue of the Library of the Surgeon-General's Office, United States Army. Vol. 1. A-Berlinski. Washington, U.S. Govt. Print. Off., 1880.
888 p.

Library and Museum Building

Billings supervised the planning and construction of a building completed in 1887 to house the library and medical museum.

40. Billings, John Shaw.
[Memoranda.]
Ms. 4 *l.*
Notes on planning and building requirements for the medical library and museum.

41. Billings, John Shaw.
Photograph in middle years, taken in Philadelphia.

42. U.S. President (Chester A. Arthur)
Message from the President ... for the erection of a suitable fire-proof building to contain the records, library, and museum of the Medical Department of the Army. December 17, 1883.
12 p. (U.S. 48th Cong. 1st Sess. Senate. Exec. doc. no. 12)

43. U.S. 48th Cong. 2d Sess. House of Representatives.
H. R. 48 ... An act providing for the erection of a building to contain the records, library and museum of the Medical Department, United States Army. Feb. 17, 1885.
4 p.

44. U.S. Army. Surgeon General's Office. Medical Library and Museum.
Engraving, 1885.

Nos. 40-43: Lent by New York Public Library

Army Medical Museum

Created during the Civil War, the Army Medical Museum was also placed under Billings' charge during most of the years he was creating the library.

45. Drum microscope.
Made by Dolland, circa 1860.

46. Compound microscope.
Made by Smith and Beck of London, circa 1867.

47. Billings, John Shaw.
Description of selected specimens from the Army Medical Museum, Washington, D. C. Chicago, 1892.
14 p.
Describes material in the Army Medical Department exhibit at the Columbian Exposition.

48. Microtome.
Made by Bichoff, N. Y., before 1870.

49. Walton's guarded curette.
Made by Wiess of London.

50. Compound microscope.
Made by Jos. Zentmayer of Philadelphia, circa 1862.

Nos. 45-50: Lent by Armed Forces Institute of Pathology, Medical Museum

CASE IV

The Johns Hopkins Hospital

From the time of his celebrated report on the barracks and hospitals of the U.S. Army (1870), Billings had been especially interested in hospital construction. In 1875, his plans for the Johns Hopkins Hospital were selected by the trustees from five proposals that had been submitted. In contrast to existing American practices, Billings specified that the administration should be under a single head, based on a military plan; that clinical instruction, with the exception of surgery, should be given in the wards and out-patient department rather than in a clinical amphitheater; that there should be graded accommodations for patients of different means; that a system of financial, historical, and clinical records should be maintained, and that reports on original scientific work should be published annually. Billings was highly influential in guiding the institution to a position of leadership in the reform of American medical education. The hospital opened May 7, 1889, and was soon recognized as the finest of its kind.

51. The Johns Hopkins Hospital. Baltimore.
Photograph of Broadway front.

52. The Sun. Baltimore, May 3, 1889.
Johns Hopkins Hospital opening.
Clippings.

53. The Johns Hopkins Hospital. Baltimore.
Opening of The Johns Hopkins Hospital, Baltimore, Tuesday, May 7th, 1889. Programme.
JSB, medical adviser of the trustees, delivered one of the addresses.

54. The Johns Hopkins University. Baltimore.
Opening of Levering Hall, Thursday, January 16, 1890.
JSB's invitation, and Ladies' ticket.

55. King, Francis T., President, The Johns Hopkins Hospital. Baltimore, July 22, 1876.
Letter to JSB [copy]
Invites JSB to render "medical advisory assistance" in the planning and construction of the Johns Hopkins Hospital.

56. Billings, John Shaw.
... Description of the Johns Hopkins Hospital ... Baltimore, 1890.
116 p. illus., plans, plates.
At head of title: Publications of the Johns Hopkins Hospital.
A classic in the field of hospital construction, engineering, sanitation, ventilation, and administration.

57. Billings, John Shaw.
Principles of organization of a medical department recommended for the Johns Hopkins University.
Ms. 3 ℓ.

58. Billings, John Shaw.
Hospital construction and organization.
(In Hospital plans. Five essays relating to the construction, organization and management of hospitals, contributed by their authors for the use of The Johns Hopkins Hospital of Baltimore. New York, William Wood & Co., 1875. p. 1-46)

59. Billings, John Shaw.
Photograph, in middle years.

Nos. 52-55, 57: Lent by New York Public Library

CASE V

Vital Statistics

Billings, who delighted in statistics as such, had a leading role in the development of vital statistics in connection with the U.S. Census from 1880 to 1910.

60. Collection of letters from state and city boards of health to JSB referring to his request for mortality statistics for the census of 1890. Includes letters from:
Ford, William H., President, Board of Health. Philadelphia, January 17, 1890
Griffin, John, Commissioner of Health. Brooklyn, New York, January 2, 1890.
Kilvington, S. S., Commissioner of Health. Minneapolis, November 8, 18--.
Kohlhasse, A. New Orleans, La., May 14, 1890 (telegram).
Louisiana. Board of Health. New Orleans, December 21, 1889.
Sinks, N., Clerk. Department of Health. St. Paul, Minn., February 20, 1890.
Tomlinson, William, Registrar of Vital Statistics. Department of Health, Chicago, January 17, 1890.
Tracy, Roger S., Register. Health Department, Division of Vital Statistics, New York, January 15, 1890.

61. Porter, Robert P., Superintendent of the Census. Department of the Interior, Census Office, Washington, D. C., May 3, 1889.
Letter to Secretary of the Interior, with endorsements [photocopy]
Seeks approval for the selection of JSB "to superintend the col-
[illegible]ation of the mortality and vital statistics of the

62. Noble, John W., Secretary of the Interior. Washington, May 8, 1889.
Letter to the Secretary of War [photocopy]
Concerns JSB's appointment "to superintend the collection and compilation of the Mortality and Vital Statistics of the Eleventh Census."

63. Proctor, Redfield, Secretary of War. [Washington], May 16, 1889.
Letter to Secretary of the Interior [photocopy].
Approves appointment.

64. U.S. Census Office.
Report on vital and social statistics in the United States at the eleventh census: 1890. Part 1. Washington, U.S. Govt. Print. Off., 1896.
1059 p.
Prepared by JSB.

65. Billings, John Shaw.
Letter book, 1889-1895.
Contains copies of outgoing correspondence written by JSB as special agent for census of 1890.

No. 60: Lent by New York Public Library
Nos. 61-63: Courtesy of National Archives

Hollerith Tabulating Equipment

Billings is also credited with being the progenitor of the modern tabulating machine. His suggestion that the various statistical data of the living and the decedent "might be recorded on a single card or slip by punching small holes in it, and that these cards might then be assorted and counted by mechanical means according to any selected group of these perforations" was taken up and applied by Mr. Herman Hollerith, who invented the tabulating equipment used by the Census. The inventor gave Billings credit for the idea and offered him a share in his Tabulating Machine Company, which eventually grew into the International Business Machines Corporation.

66. Hollerith early tabulation equipment, including tabulating machine, key punch, and sorting box.
Through the medium of punched cards and these machines, the U.S. Census of 1890 was counted--the first population count of a great nation made by other than manual means.

67. Scientific American. August 30, 1890.
Coverpage illustrating the "Electrical Enumerating Machine" in use at the Census [photocopy].

68. Hollerith, Herman.
Photograph.
Inventor of the "Electrical Enumerating Mechanism".

Nos. 66, 68: Lent by International Business Machines Corporation
No. 67: Courtesy of Library of Congress

Building Plans

In addition to the Johns Hopkins Hospital, Billings participated in planning the Barnes Hospital of Soldiers' Home, Washington, D.C. (1873), the Laboratory of Hygiene (1892) and the William Pepper Laboratory of Clinical Medicine (1895) in Philadelphia, the Peter Bent Brigham Hospital in Boston (1913), the City Hospital at Memphis (1897), the Army Medical Museum and Library (1887), and the New York Public Library (1911).

69. Peter Bent Brigham Hospital. Boston, Mass.
Proposed plan. Scheme K.
Architectural drawing, scale 1 inch = 32 ft.

70. Johnson, L. H. H.
Conditions of competition for the Peter Bent Brigham Hospital, Boston, Mass. [1908]
12 p.
JSB is named as medical adviser.

71. Cochrane, Alexander. Boston, Mass., November 10, 1906.
Letter to JSB.
Discusses plans for Peter Bent Brigham Hospital.

72. Cochrane, Alexander. Boston, Mass., March 14, 1907.
Letter to JSB.
Discusses plans for Peter Bent Brigham Hospital.

73. U.S. Army. Surgeon General's Office. Library.
Photograph, 1894.
Shows "Library Hall": the reading room and stacks.

Nos. 69-72: Lent by New York Public Library

J. S. Billings vs. the United States

Billings had his problems with red tape. Although under orders to tour Europe on behalf of the Office of the Surgeon General in 1881 and 1884, the Treasury Department did not recognize the trips as official, and Billings had to repay his expense allowance.

74. U.S. Court of Claims.
John S. Billings vs. the United States [Miscellaneous papers] 1887.
Although the Court of Claims ruled in Billings' favor, it was declared to have no jurisdiction in the case.

75. Billings, John Shaw. March 15, 1888.
Draft letter to the Secretary of War.
Requests payment for the legal services of J. K. McCammon in the Court of Claims case.

Nos. 74-75: Lent by New York Public Library

CASE VI

Honors and Awards

From the mid 1860's until his death in 1913, Dr. John Shaw Billings was outstanding in American medicine and public affairs. He achieved an international reputation as physician, librarian, bibliographer, statistician, educator, hospital planner, and sanitarian. His accomplishments won him honorary degrees from Edinburgh, Oxford, Munich, Budapest, Dublin, and Harvard, and membership in many learned societies. In 1895, 259 physicians from Great Britain and America sponsored a testimonial dinner at which Dr. Billings was presented with a silver box containing a check for $10,000. That box and his portrait are now in the National Library of Medicine.

76. Lovejoy, B. G., Secretary, Board of Directors, Garfield Memorial Hospital. December 13, 1882.
Letter to JSB.
Notifies JSB that he is elected to the Board of Directors.

77. Yale University.
Engraved invitation, signed by Arthur Twining Hadley, inviting JSB to New Haven, Conn., on Wednesday, October 23, 1901, to receive the honorary degree of Doctor of Laws.

78. Inman & International Steamship Company.
List of saloon passengers per United States and Royal Mail Steamer, "City of Paris," from New York to Liverpool, Wednesday, June 12th, 1889.
Includes Surgeon J. S. Billings, U.S.A.

79. New York Herald [Paris ed.] June 25, 1889.
Honor well won. Dr. J. S. Billings, U.S.A. receives a degree from the University of Oxford.
Clipping.

80. International Medical Congress. Philadelphia, September 4-9, 1876.
Membership card.
Issued to JSB.

81. Billings, John Shaw.
Photograph of the portrait painted by Cecilia Beaux in 1895.
JSB wears the gown of a Doctor of Civil Law of Oxford. The original hangs in the Reading Room of the National Library of Medicine.

82. The British Medical Journal. July 6, 1889.
An international courtesy.
Clipping.
Editorial about JSB and the Oxford degree.

83. Silver box.
Inscribed: "From the physicians of the United States and Great Britain to John S. Billings in grateful recognition of his services to medical scholars. 1895."
Presented to JSB at a testimonial dinner given by 259 physicians. The box enclosed a check for $10,000.

84. Billings, John Shaw.
Photograph in academic gown.

85. Medical Society of the State of New York.
Certificate of honorary membership.
Issued to JSB, February 5, 1880.

86. Athens Medical Society.
Certificate of honorary membership.
Issued to JSB, November 5, 1890.

87. Royal College of Surgeons in Ireland.
Announcement of a meeting of the Fellows to be held on July 7, 1892, "to witness the conferring of the Honorary Fellowship upon ... John Shaw Billings."

88. Dublin University.
Invitation to JSB to attend the 300th anniversary celebration of the University on July 8, 1892.

Nos. 76-80, 82, 86-88: Lent by New York Public Library
Nos. 83, 85: Gift of John Shaw Billings, II
No. 84: Courtesy of Dr. Jean A. Curran

Diverse Accomplishments

The various materials displayed in this case indicate the diversity of the man's interests and accomplishments.

89. Billings, John Shaw.
... Can the reports of the sick and the sanitary statements of the different armies be arranged according to a scheme essentially uniform for the purpose of gaining statistics of scientific worth for comparison of diseases, wounds and deaths in times of peace and war? ... Berlin, L. Schumacher, 1891.
30 p. illus.
Paper presented to X. internationaler medicinischer Congress.

90. Vest, Y. Y. United States Senate, Washington, D. C., March 26, 1892.
Letter to JSB.
Requests a conference with JSB regarding the ventilation of the Senate chamber.

91. The Engineering Record. October 3, 1891.
Heating and ventilating the U.S. Senate Chamber, Washington, D. C.
Clipping.

92. Billings, John Shaw.
Diagrammatic sketch.
Pertains to heating and ventilation of U.S. Senate Chamber, Washington, D. C.

93. Young, Casey, Chairman, Sub-Committee on Ventilation, House of Representatives. Washington, D. C., April 14, 1876.
Letter to JSB.
Requests JSB to be a member of the Board "to devise measures for the proper ventilation of the Hall of the House of Representatives."

94. Billings, John Shaw.
Photograph in his library at 84 Gay Street, Georgetown.

95. Billings, John Shaw.
Autobiographical fragment.
Ms. 8 p.

96. Billings, John Shaw. On board U.S. Transport Ship Marcia C. Day, March 20, 1864.
Letter to Captain E. L. Hartz.
Report on the sanitary condition of ship and passengers.

97. Plastic surgery kit, circa 1864.

98. Baltimore News. June 30, 1903.
Sanitation in two cities--Dr. John S. Billings on Washington and Baltimore.
Clipping.

99. Sherman, John. Department of State, Washington, May 13, 1897.
Letter to JSB.
Refers to JSB's participation in the Congress of the International Statistical Institute to be held at St. Petersburg in the summer of 1897.

Nos. 89-93, 98-99: Lent by New York Public Library
No. 94: Courtesy of Dr. Jean A. Curran
No. 95: Gift of John Shaw Billings, II
No. 97: Lent by Armed Forces Institute of Pathology, Medical Museum

CASE VII

University Lectures

During his Army career, Billings often lectured at American universities. He retired from the Army in 1895, to assume the full duties of Professor of Hygiene at the University of Pennsylvania.

100. Gilmore, J. C., Assistant Adjutant General, War Department. Washington, D. C., April 29, 1895.
Letter to JSB.
Informs him that his request for retirement has been approved.

101. U.S. War Department. Adjutant General's Office.
Special orders no. 229. Washington, October 1, 1895. Extract. 1 ℓ.
JSB's retirement orders.

102. Merriam (G. & C.) Co. Springfield, Mass., December 21, 1900.
Letter to JSB.
Informs him that a copy of Webster's International Dictionary, in the preparation of which he assisted, has been sent to him.

103. Billings, John Shaw.
Photograph, middle years.

104. Columbia College, New York. School of Mines.
Sanitary engineering; a course of study recently established. New York, 1885.
15 p.
Includes notice of JSB's course on "principles of hygiene."

105. Billings, John Shaw.
Lectures at School of Mines, Columbia College. Spring Term, 1888.
Ms. 22 p.
Notes for lectures on hygiene and sanitation.

106. Billings, John Shaw.
Cancer statistics.
Typescript. 6 p.

107. Billings, John Shaw.
Extract from lectures, University of Pennsylvania, 1896.
Photocopy (original in New York Public Library)
On development of punch cards.

108. Bowditch, H. P., Dean, Harvard University Medical School. Boston, Mass., June 8, 1886.
Letter to JSB.
Invitation to give a course of six lectures on the history of medicine.

Nos. 100-102, 106, 108: Lent by New York Public Library
No. 103: Courtesy of Dr. Jean A. Curran
No. 107: Courtesy of Dr. C. J. Maloney

New York Public Library

In 1895, the three great New York libraries, the Astor Library, the Lenox Library, and the Tilden Trust, were united to form the New York Public Library. Billings was appointed Superintendent-in-Chief. He resigned his professorship at the University of Pennsylvania on June 1, 1896; from then until his death he was in charge of the new library. Billings planned the building still standing at 42nd Street and Fifth Avenue, and organized the collections and administration of the library.

109. Lydenberg, H. M. Greensboro, N. C., January 23, 1955.
Letter to Colonel Frank B. Rogers.
Encloses photograph of JSB (no. 110).

110. Billings, John Shaw.
Photograph, 1911, seated at desk in Astor Library.

111. Billings, John Shaw.
Progress of medicine in the nineteenth century. Washington, U.S. Govt. Print. Off., 1901.
Reprinted from Smithsonian Report for 1900, p. 637-644.

112. New York Public Library.
Invitation to laying of the cornerstone, November 10, 1902.
Issued to Dr. and Mrs. John S. Billings.

113. New York Times. May 24, 1911.
50,000 visitors see new public library.
Clipping.

114. Billings, John Shaw
Photograph, circa 1896.
Autographed by JSB.

No. 111: Lent by Carnegie Institution of Washington
Nos. 112-113: Lent by New York Public Library

Carnegie Institution of Washington

Besides being one of the original incorporators of the Carnegie Institution of Washington in 1902, Billings served as Chairman of the Board of Trustees for 10 years. His proposal for the consolidation of New York's many free circulating libraries with the New York Public Library led to the establishment of the famed Carnegie libraries, in whose planning he directly assisted Mr. Andrew Carnegie.

115. Index Medicus, a monthly classified record of the current medical literature of the world. 2d ser., vol. 11, no. 3, March, 1913.
Fielding H. Garrison, ed. Washington, Carnegie Institution of Washington, 1913.

116. Carnegie Institution of Washington.
Report of the president for the year ending October 31, 1913. Washington, 1913.
p. 5-35 (Extract from the yearbook)
Contains eulogy of JSB, with portrait.

117. Cortelyou, George B., Secretary to the President. White House, Washington, November 25, 1901.
Letter to JSB.
Invitation to JSB to lunch with the President, Mr. Carnegie, and Dr. Gilman.

Nos. 115-116: Lent by Carnegie Institution of Washington
No. 117: Lent by New York Public Library

CASE VIII

Obituaries, Biographies, and Associates

John Shaw Billings died on March 11, 1913, and was buried in Arlington Cemetery. His memorialists have included associates from the Surgeon General's Office Library, the University of Pennsylvania, and the New York Public Library.

118. New York Public Library.
Memorial meeting, April 25, 1913, in honor of the late Director John Shaw Billings, L.L.D., D.C.L., Lieut. Col., U.S.A. retired.
Program.

119. New York Public Library.
Memorial meeting in honor of the late Dr. John Shaw Billings, April 25, 1913. New York, 1913
27 p.

120. New York Tribune. April 26, 1913.
Laud Billings's career. More than 400 at memorial meeting in library.
Clipping.

121. Presbyterian Hospital. New York. Board of Managers.
In memoriam, John S. Billings, M.D. New York, 1913.
9 ℓ.
In recognition of JSB's service as a member of the Board.

122. Fletcher, Robert.
Photograph, later years.
Scholar and physician, Fletcher was JSB's most valued assistant in preparing the Index-Catalogue and Index Medicus.

123. Royal College of Surgeons of England.
Honorary medal.
Awarded to Robert Fletcher, 1910.

124. Lydenberg, Harry M.
John Shaw Billings, creater of the National Medical Library and its catalogue, first director of the New York Public Library. Chicago, American Library Association, 1924.
94 p.

125. Mitchell, S. Weir.
Biographical memoir of John Shaw Billings, 1838-1913, with The scientific work of John Shaw Billings by Fielding H. Garrison. Washington, National Academy of Sciences, 1917.
p. 375-416.
Reprint from National Academy of Sciences, Biographical memoirs, vol. 8. Includes portrait.

126. Garrison, Fielding H.
Photograph, later years.

127. Garrison, Fielding H.
John Shaw Billings, a memoir. New York, Putnam, 1915.
432 p.

Nos. 118-120: Lent by New York Public Library
No. 121: Gift of John Shaw Billings, II
No. 123: Gift of Colonel Robert Fletcher
No. 125: Lent by Carnegie Institution of Washington

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